# Measuring employee satisfaction in new offices – the WODI toolkit

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## Abstract

**Purpose** – The purpose of this paper is to present a toolkit to measure employee satisfaction and perceived labour productivity as affected by different workplace strategies. The toolkit is being illustrated by a case study of the Dutch Revenue Service.

**Design/methodology/approach** – The toolkit has been developed by a review of literature and tools for data-collection. The toolkit has been tested and explored further in a number of case studies.

**Findings** – The toolkit includes a working environment diagnostic tool for an indicative or diagnostic evaluation, a list of key performance indicators that can be used for benchmarking purposes, and a space utilization monitor to measure the occupancy of workplaces. Data collected with the tool provides organizations with a clear picture of user experience of the working environment on its own, in comparison to other organizations and in comparison to the goals of the organization. Employees are also asked to rank the issues in order of importance to overall satisfaction and perceived productivity.

**Research limitations/implications** – The modules on economic added value and costs to explore the facility costs effects of different office concepts have not been tested yet.

**Practical implications** – The toolkit and the data from case studies can be used by managers to support decision making on interventions with regard to the organizations' accommodation policy, re-designing or adaptation of the present building, or moving to another building. Scientifically, the data from case studies and cross case analyses can be used to explore and test hypotheses about the best possible fit between people, processes and place.

**Originality/value** – Although a number of data collection tools have been developed earlier, the strength of the present toolkit is its integral approach and is applicability to both traditional and innovative offices.

**Keywords** Job satisfaction, Employee attitudes, Workplace, Data collection, Benchmarking, The Netherlands

**Paper type** Research paper

## Expectations and reality

Briefing, design and management of office buildings are complex processes. Multiple actors are involved, all of them having their own preferences and interests (Maarleveld, 2008). Personal views, intuition, emotion and rationality all play their role. Evidence based decision making may help to improve the benefits of design interventions and to reduce the risks. Pre-design and post-occupancy evaluations are important means to collect data about the performance of working environments from a user's perspective (Preiser and Vischer, 2005; van der Voordt and Maarleveld, 2006). This is particular true when organizations want to change their office accommodation into a new working environment with new ways of working. In the mid-1990s, a number of Dutch

organizations such as Interpolis Insurance Company, ABN AMRO Bank and the Government Buildings Agency began to experiment with new workplace strategies and innovative "flexible" office concepts (van Wagenberg, 1996; Vos and van der Voordt, 2002; Mallory-Hill *et al.*, 2005).). Worldwide a similar trend was going on, steered by organizations such as Steelcase, IBM, Johnson Controls, Chiat/day and many other "early adaptors" (Becker, 1993; Aronoff and Kaplan, 1995; Worthington, 1997; Duffy and Powell, 1997). These organizations expected that activity based use of the workplaces in a transparent office environment would achieve several targets simultaneously (Bradley, 2001; Balkin *et al.*, 2001; Becker, 2004). Shared workspaces and desk rotation were introduced as a way of achieving cost reduction by a more efficient use of space (Ornstein *et al.*, 2001). It was thought that people's work could be made more effective and more enjoyable by allowing them to choose from a varied supply of activity related workspaces – open workspaces for communication, cockpits for work requiring concentration, meeting places for formal consultation, clubs and places to sit for informal consultation, etc. (van der Voordt, 2003). It was also expected that making much use of glass and managing with as few walls as possible would improve communication and achieve a more rapid exchange of knowledge and experience. There was however some concern about a possible conflict between the standardized workspaces for communal use wanted by management, and universal human needs such as the need for a place of one's own, privacy, identity, status and the ability to arrange one's own work environment to suit one's own personal needs (Sundröm *et al.*, 1982). To avoid management goals such as cost reduction and increased labour productivity being achieved at the expense of decreased work satisfaction, part of the money saved was invested in high-quality IT, attractive architecture and modern, ergonomically designed, furniture.

An important question is whether new office concepts actually lead to increased labour productivity? Or is the openness too distracting, so that people become overloaded and productivity actually falls? And how do employees deal with flexible workspaces in an open setting? People are creatures of habit, so perhaps they just go on sitting in the same place. Moreover, the constant need to change places may cause a great deal of disturbance. This makes it important to know how often people actually do change place. And what are the effects of having central and digital archives? Does the reduction in space required for filing conflict with people's need for ample personal filing space or the fact that it is easier to read a printout than a document on a computer screen?

### The WODI toolkit
In order to get answers to these questions, The Dutch Center for People and Buildings has started a series of project evaluations with two aims: first, to find out whether organizations' expectations were actually fulfilled and housing goals were actually achieved, and second, to provide valid and reliable data to support future decisions on housing or re-housing. Measurement is only possible if suitable tools are available. Many existing questionnaires and observation tools in the field of work and the work environment, such as periodic research into staff satisfaction and the annual risk inventory and evaluation, pay little if any attention to the physical work environment. The same can be said of the balanced score card and EFQM business model. Most of these tools, though specifically developed to measure how well the physical work environment is functioning, are often inappropriate to new office environments which make flexible use of different types of workspace. This led to the development of a new

evaluation toolkit, the "Work Environment Diagnosis Instrument" (WODI), including four different tools performing post-occupancy evaluations (POE's) on different levels (Preiser *et al.*, 1988):

(1) WODI classic, a tool to support a diagnostic POE;

(2) WODI light, a quick tool that can be used in an indicative POE;

(3) WODI key performance indicators (KPI) in order to be able to benchmark buildings on employee satisfaction and dissatisfaction; and

(4) the space utilization monitor (SUM), to measure data on occupancy ratios.

*WODI classic*
WODI classic includes a long questionnaire for employees, protocols for interviews with key persons, formats for workshops and observation schemes to measure the occupancy rate of different workplaces (Volker and van der Voordt, 2005). WODI classic is organized according to a modular construction, increasing organizational clarity and allowing priorities to be set and components to be excluded to suit the aim of the individual diagnosis and to link the evaluation to the current accommodation policy. Three introductory modules allow a selection to be made from the many possibilities offered by the tool, e.g. yes or no observations, group interviews and so on. Three further modules were developed to establish the current situation, with particular attention to organization, work processes and facilities (including housing). Six further modules make it possible to measure the way the work environment is experienced and used; three modules with a focus on business – measuring the perceived support of the physical environment to labour productivity, operating results and the cost of support services – and one module measuring future value (flexibility and ability to cope with future developments). The last module is concerned with the implementation process. A process evaluation is important to determine the extent to which the use and perception of the accommodation are influenced by the method of implementation. Each module consists of a set of instructions and a little theory, a brief note on relevance, a description of possible methods and measurements and questions for interviews, oral and written.

For instance, the interview protocol with regard to labour productivity starts with an open question: "In your opinion, is the contribution made by the accommodation and other facilities to labour productivity positive or negative? Why?" The interview then goes on to ask about the assumed effects of environmental factors such as flexible workspaces, the flex factor' (the ratio of the number of workspaces to the number of staff), the transparency of the environment, network facilities, etc. The staff questionnaire asks about things like how well does the work environment support work requiring concentration, communication with colleagues and communication with people outside the organization? How well does your work environment support desk work, formal and informal consultation and filing?

The results allow people to become more aware of the occupation and utilization of their accommodation and make it possible to carry out a proper discussion of possible improvements. The data are applicable on three policy levels:

(1) strategic, to support housing policy or adjustments to that policy;

(2) tactical, to support interventions that fit within the strategic plan; and

(3) operational, i.e. concrete interventions affecting the daily use and management of the work environment.

As such, the tool is relevant to a variety of different bodies: the supervisory board, management, staff, the works council and supporting services such as facilities management, IT and human resources management. The systematic collection of data for several projects makes it possible to compare projects for similarities and dissimilarities in concepts and effects, so providing a sound basis for the development of a body of knowledge on relationships between organizational characteristics, the nature of work processes and the most appropriate housing. Carrying out measurements over extended periods makes it possible to establish long-term effects. Cross-case data are also an important source for benchmarking. Data on successful projects "best practice" can serve as a source of inspiration for new projects. Knowledge of less successful concepts "worst cases" can be used to avoid future failures. Thus, data provided by the diagnosis tool can contribute to more efficient and effective decision making.

The tool can be applied at different points in time: at an arbitrary moment, as part of a baseline measurement before some housing intervention, or as part of a measurement after the event, e.g. a few months after the introduction of a new office concept (first effect measurement) or 9-12 months after introduction (second effect measurement).

*WODI light*

Managers often complain about the workload of filling out long questionnaires. But a thorough evaluation asks for a thorough research design, involving both managers and employees, which is inevitably time consuming. However, in order to cope with complaints about the time needed to execute a WODI classic, a WODI light version has been developed (Volker and Maarleveld, 2007). This questionnaire is a less thorough and less-time consuming but still a scientific evaluation tool that can be used in case of an indicative evaluation. WODI light includes a short questionnaire with a focus on issues that have turned out to be of utmost importance to overall employee satisfaction and labour productivity (Figure 1).

To develop this indicative evaluation tool three steps of research have been executed. First, a literature review has been conducted of research into the most important aspects of the work environment, according to employees. Second, a solid database has been build using WODI classic data of 17 organizations with over 2,000 respondents (data-collection period 2003-2006). In each case respondents had been asked to mention the three most appreciated and three least appreciated aspects of their working environment. These data have been evaluated on the relevance of the physical environment compared to other aspects of work, like colleagues, salary and supervision. And thirdly, a so-called path analysis (a multivariate regression analysis) has been executed on compound scales that have been constructed on the bases of contingency analyses of different items and alpha's Cronbach tests. In total 15 constructs were found (Table I). Based on further research using these constructs, it has been decided for 2009 to split construct 14 (inner climate) into three different constructs.

Combining the findings of the literature review with a qualitative and quantitative analysis of our database, a new questionnaire of 39 questions has been set-up. This WODI light questionnaire includes different types of questions that have been

structured into themes, completed with questions on personal characteristics and overall questions. The themes include organization and work, the building, the direct work environment, privacy, the workplace, concentration, communication, archive, IT, indoor climate, external services and perceived work productivity. This main purpose of the questionnaire is to measure employee satisfaction about their work environment. The questionnaire is web based so data are collected by the internet. Filling in the questionnaire takes about 10 minutes per respondent. The questions about satisfaction and productivity make use of a five-point scale (from very dissatisfied to very satisfied). Overall, grades with regard to a few main themes are measured on a ten-point scale, and personal features of the respondent are measured by multiple choice questions. Furthermore, the actual use of the workplace is asked for, and also which activities are performed by the employees during the day (in per cent of their working time). A standard report is generated which provides the client with the results of the research within one day. The core report consists of tables and charts representing the answers to the questionnaire. The results of the survey can be compared with the overall average percentage of satisfied and dissatisfied employees, based on all case studies, on a number of KPI (tool c). All data are stored in an ever growing database to be used for further research.

*WODI key performance indicators on satisfaction and dissatisfaction*
Based on the results of a cross case analysis of WODI light data from more than 7,000 respondents in 23 cases (19 organizations), a list of KPI has been developed. These KPI's may be used to define targets for the level of employee satisfaction on issues that highly affect employees' overall satisfaction, or to enable organizations to compare one's own working environment performance to the performance of other organizations.

| Factor | Variables |
| --- | --- |
| 1. Organization | Management, salary, colleagues, team spirit, job security, social engagements and freedom of work |
| 2. Content of the work | Content and complexity of the work |
| 3. Functionality | Space for official meetings, space for informal meetings, zoning, activity-based workplace use and orientation |
| 4. Ergonomics | Dimensions of the workplace, dimensions of furniture, comfort of furniture, flexibility of furniture and adaptability of the workplace |
| 5. Aesthetics | Use of materials, use of colour, furnishing and architecture |
| 6. Transparency and inspiration | Level of transparency, inspiring interior |
| 7. Psychological aspects | Not being seen, heard or disturbed, distinction of status, space for personal attributes, confidentially and freedom in work |
| 8. Appearance of the work environment | Contribution of the work environment to well being, being proud, and media attention, the workplace being attractive, inviting, a front piece and nice atmosphere |
| 9. Communication | Communication with colleagues, informal and formal consultation, contact ability, exchange of knowledge and experience and environment stimulates communication |
| 10. Concentration | Being able to work concentrated, not being distracted, satisfaction about concentrated activities |
| 11. Archive | User friendliness of the archives, central archive, personal archive, way of filing and satisfaction about filing |
| 12. IT | Computers, network, copier, fax, software and assistance of help desk |
| 13. Facility management | Reception, mail delivery, opening hours, satisfaction helpdesk, lunch room, coffee and tea, cleaning, security, support during meetings and making reservations |
| 14. Indoor climate | Temperature, ventilation, air quality, acoustics, artificial lighting, day light, personal control of lighting and heating and noise of climate installation |
| a. Indoor climate | Temperature, ventilation, air quality and personal control of heating |
| b. Lightning | Artificial lighting, day light personal control of lighting |
| c. Acoustics | Acoustics, noise of climate installation |
| 15. Perceived productivity | The work environment being supportive to concentration, communication, desk work, telephoning, meeting, archiving and administrating, stimulation of high-standard work and being productive and providing a nice workplace |

**Table I.**
Constructs in WODI light, based on cross case research

Three different indicators have been developed: indicators about the level of satisfaction, indicators about the level of dissatisfaction and a grade which covers the level of satisfaction as well as the level of dissatisfaction. The distinction is necessary because a high level of satisfaction does not automatically mean a low level of dissatisfaction. The same principle applies to the productivity.

For every item, the indicator is based on the average score of the percentage of satisfied or dissatisfied respondents in all cases on this factor (Table II). It is intended to calculate new indicators every year, including data from additional case studies. The indicator 2009 shows the average percentages based on all cases where data have been collected using WODI light in the period 2007-2008. The indicator 2010 will be developed at the end of 2009 and will be based on all WODI light cases in the period 2007-2009. For organizations that want to use the WODI light KPI as a tool for benchmarking, the

| | Indicator 2009 | |
|---|---|---|
| Key performance indicators | Satisfaction (%) | Dissatisfaction (%) |
| Organization | 63 | 11 |
| Content and complexity of the work | 77 | 6 |
| User influence | 41 | 22 |
| Accessibility of the building | 74 | 13 |
| Architecture and appearance | 46 | 26 |
| Spatial configuration | 42 | 26 |
| Number, diversity and functionality of the workplaces | 39 | 29 |
| Location of work sites | 49 | 20 |
| Degree of openness and transparency | 49 | 20 |
| Functionality and comfort of the workplace | 53 | 24 |
| Interior design, appearance and ambiance | 38 | 32 |
| Privacy | 45 | 31 |
| Concentration | 36 | 40 |
| Communication and social interaction | 69 | 12 |
| Archive and storage facilities | 32 | 32 |
| IT and IT supporting services | 54 | 18 |
| Facility management | 52 | 13 |
| Indoor climate | 31 | 45 |
| Lighting | 56 | 14 |
| Acoustics | 42 | 21 |
| Facilities for remote working | 33 | 25 |
| Labour productivity | Productivity supported (%) | Productivity not supported (%) |
| Perceived personal productivity | 37 | 25 |
| Perceived team productivity | 35 | 23 |
| Perceived organizational productivity | 26 | 19 |
| Overall judgment | Grade | |
| Organization | 6.9 | |
| Work and work processes | 6.9 | |
| Facilities | 6.5 | |
| Pleasant work environment | 6.3 | |
| Perceived support of productivity | 5.9 | |
| Office concept | 6.0 | |

**Note:** Average percentage of satisfied and dissatisfied employees based on 23 WODI light cases

Table II.
KPI 2009 – satisfaction
and dissatisfaction

indicators can be composed by adjusting the values, e.g. by replacing overall average satisfaction scores by average of satisfaction scores of the three most appreciated buildings in the database, or by an a priori standard set-up by the organization (e.g. "our target is to get at least 80% of the employees satisfied with the working environment"). The standard report includes a chart that creates an overview of the scores of the particular case in comparison with the indicators for satisfaction and productivity.

According to Table II, a high percentage of Dutch employees are positive about their work, the accessibility of their office, the location of spaces within the building, and the functionality and comfort of the workplace. On average, many employees in our database are dissatisfied with the architectural appearance of the building and its interior, the level of openness and transparency, and user participation in implementation of design interventions. It should be emphasized here that the bandwidth per item is quite large. In particular, the architecture of new buildings is

much more appreciated than the appearance of older and often a little out-of-date buildings. Innovative offices scored strikingly well for satisfaction with communication, transparency, attractive architecture and level of freedom of choice of workspace and working at home. But, there were a number of complaints about being unable to concentrate on one's work, lack of privacy "everyone can hear you and see you" and the high degree of dependence on IT. It is extremely important that the IT used is high-quality and trouble free. As for the effect of the work environment on labour productivity, in innovative offices some factors were positive (e.g. more rapid exchange of information) and some negative (e.g. having to log in more often and clear up one's desk more often). Soft factors such as the image, architectural appearance and contribution to wellbeing showed to have a significant effect on perceived labour productivity. Another point that emerged from the analyses is the importance of taking good care of user involvement. When implementation is carried out too much top-down and employees are not well informed about the aim of the re-housing or how the process is going, satisfaction with the process has been observed to decrease a full point.

*Space utilization monitor*
To measure the actual use of the work places, we developed a software application for a handheld computer personal digital assistant (PDA). The researcher registers the activities performed at all workplaces by walking around eight times a day during a work week and enters the observations immediately in the PDA. The two days with the highest average occupancy will be measured again the week after.

The use of a workplace is split up in three categories: vacant, temporarily vacant but personal belongings indicate present use of the workplace, and occupied. When the workplace is occupied, the present activity of the user – such as computer work, formal meeting, telephone or paper work is registered as well. In practice, it turns out to be difficult to make a valid and reliable distinction between activities such as reading, desk work, emailing, administrating and concentrating, just by observation.

The provided output includes charts of the occupancy levels and activities per type of workplace, per hour or per department (Figures 7-9 in the description of the case study). These data can be used to support decision making about the introduction of hot-desking, the ratio of number of desks/number of employees, and the number of workplaces per type (open setting, places for concentration, informal and formal meeting places and so on).

The four tools from the WODI toolkit can be used separately or combined, in different order. It seems appropriate to start with a WODI light and in case of low-satisfaction scores to conduct a follow-up study with WODI classic. This could be a selective one, with a focus on issues that turned out to evoke dissatisfaction, to get a more clear view in depth. Since the WODI KPI on satisfaction and dissatisfaction are based on the average percentages of satisfied and dissatisfied employees form the WODI light cases, the indicators can only be used in combination with a WODI light questionnaire. The tools can be applied *ex ante* (in advance of a change process) or *expost* (after the new working environment has been taken into use).

## Application of the WODI toolkit: a case study
At the end of 2006, the four tools of the WODI toolkit have been applied in a post-occupancy evaluation of the IT Department of the Dutch Tax and

Customs Administration. This department is responsible for the hardware, software and IT-services of the whole organization that is accommodated in a number of buildings scattered all over The Netherlands. The IT Department is located in the east of The Netherlands and is easily reachable by public transport and by car. It is a modern building, three storeys high, with a high level of openness and some visual breaks (Plate 1). The POE focused on one floor. Most employees have their own workplace. Groups of four-six workplaces are separated from each other by low bookcases (Plate 2).

An integrated questionnaire of both WODI classic and WODI light has been used to measure the employee satisfaction about the work environment and it is affect on the perceived labour productivity. This made it possible to compare people's response to WODI light with their response on similar questions in WODI classic. The integrated questionnaire has been send to all 91 employees working on the floor that was involved in the POE. Apart from the impact of management's commitment, the high-response rate of 78 per cent is also due to combining all research activities in the same week. The questionnaire was sent out in the same week as when the actual use of the work places had been measured with SUM.

Figure 2 shows the results of WODI light. The WODI classic questionnaire gives a more detailed view of the satisfaction on the topics asked in the WODI light questionnaire. Figure 3 show an example on the topic interior climate.

Figure 4 shows the perception of importance of the different aspects of the work environment by the respondents as measured by WODI light.



**Plate 1.**
Exterior of the building of
the case organization

**Plate 2.**
Workplaces in an open
setting

Figures 5 and 6 show the percentages of satisfied and dissatisfied respondents of the IT organization in comparison with the WODI KPI 2006. All results from the measurements with the WODI toolkit can be used to support organizations in making the best possible decisions in order to improve the quality of their buildings and to set-up a protocol on how to use and manage the building.

The allocation of workspaces and the average time spend on different activities have been measured by SUM (Figures 2 and 3). During seven days an observer recorded the activities at each workplace every hour. The results showed an average occupancy rate of 38 per cent. Figure 4 shows the average and maximum occupancy rate of different workplaces with different functions (Figures 7-9).

**Further research and development**
Although the tools discussed in this paper have more or less reached its final form, application in projects and reflections on the results will lead to small adjustments, generic or tailor-made to suit the organization being investigated. The center for people and buildings intends to make the tools suitable to other types of building as well, for example healthcare buildings and educational buildings. Parallel to the further development of the toolkit, work is being carried out on constructing a database of evaluated projects. A team has been set-up to ensure that the diagnostic tool is kept up-to-date, to expand the database and to discuss frequently asked questions and evidence-based answers supported by the data. The greater, the variety of projects with regard to size, organizational structure, corporate culture, way of working, office concept and other facilities, the more understanding can be gained of relationships
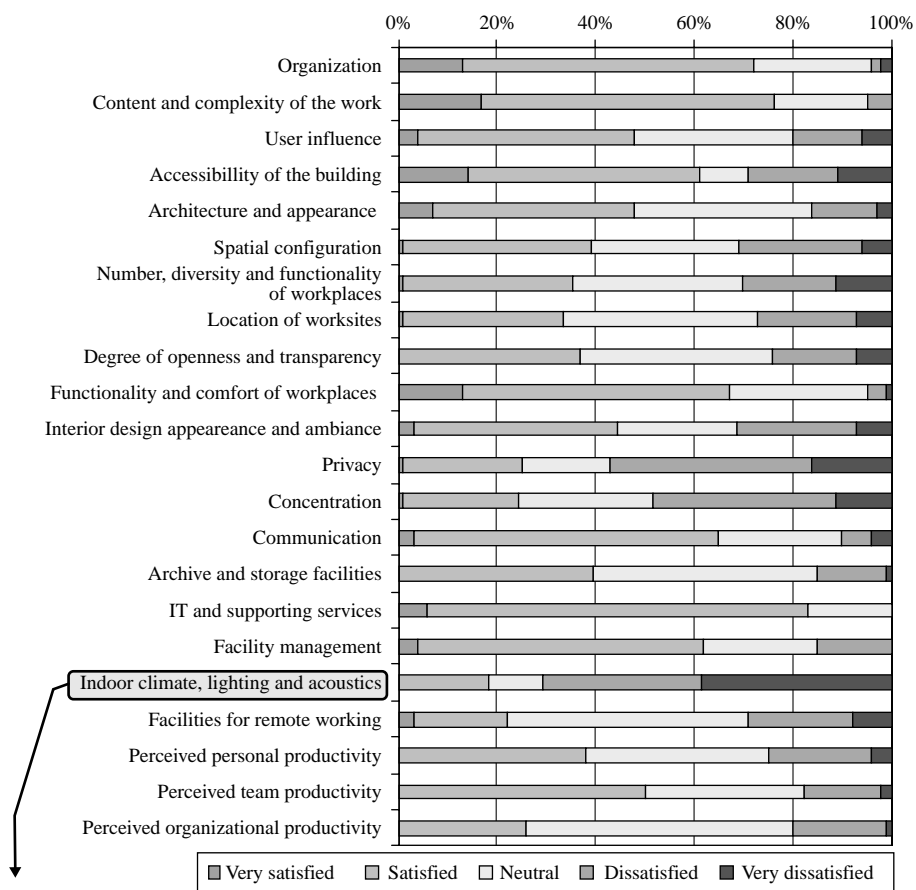
**Figure 2.**
Satisfaction with the work
environment, measured by
WODI light

between place, contextual variables, organizational characteristics, work processes, and the use and perception of the physical work environment. It will also be possible to replace currently most applied two-dimensional indicators, such as costs per person or square feet per person, by three-dimensional indicators, including benefits such as a good building performance and gaining organizational objectives.

The Center for People and Buildings also started to extend the WODI toolkit with a variety of other tools with different purposes. One of these tools is the so-called workplace game (de Bruyne and de Jong, 2008). This game includes a number of cards with questions raised in a number of cases and per question four possible answers. Players are asked to give their personal answers that thereupon can be discussed with the whole group, trying to find consensus about the dilemmas and best possible solutions. By playing the game with prospective users of a new or redesigned building, employees become more aware of advantages and disadvantages of different office concepts. Observation of players and documentation of discussions can be used as input for writing a program of requirements or starting a process to improve support for accommodation change. Another tool that has been developed is the so-called
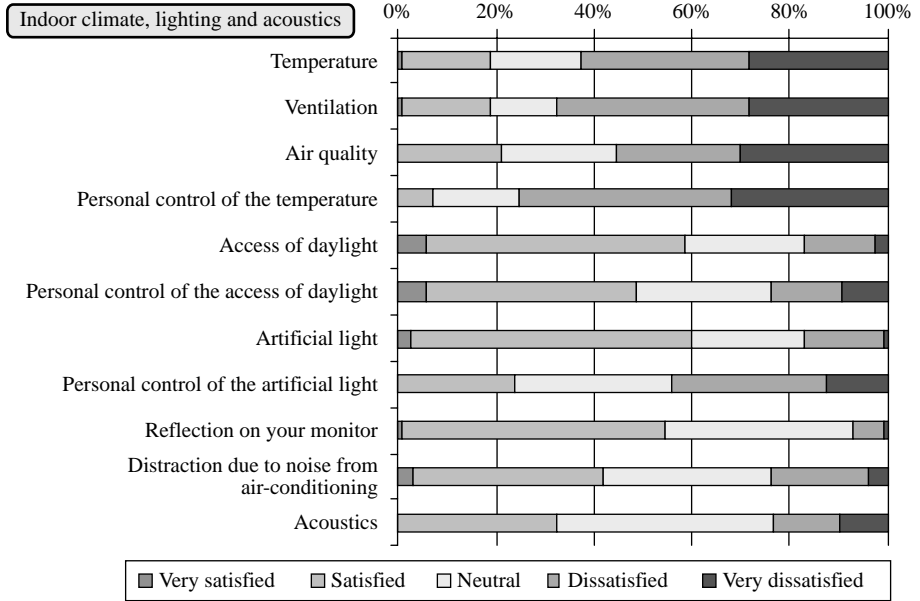
**Figure 3.**
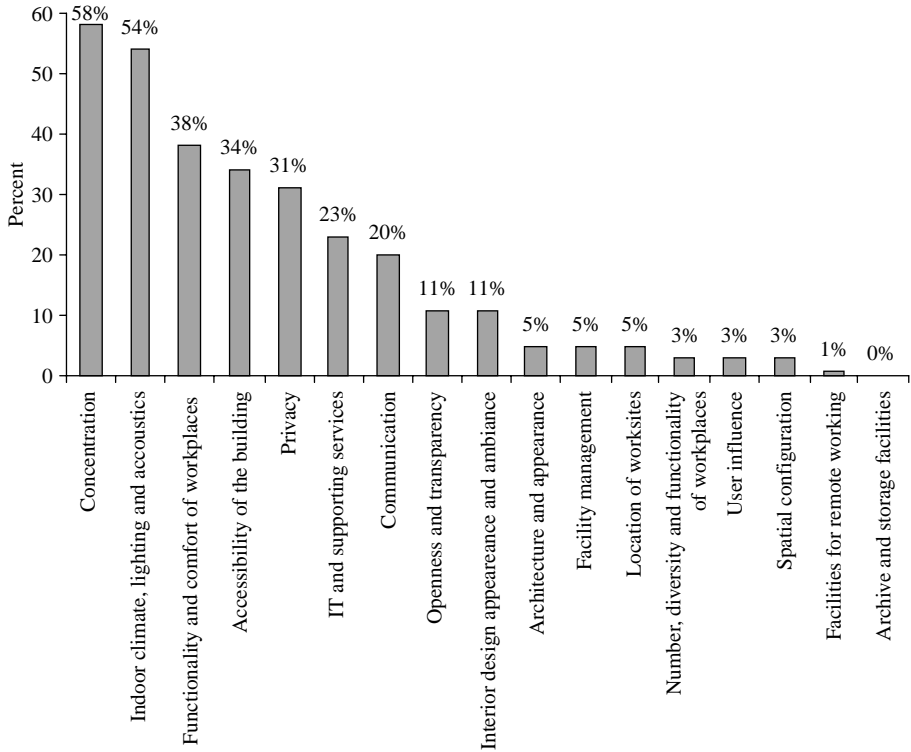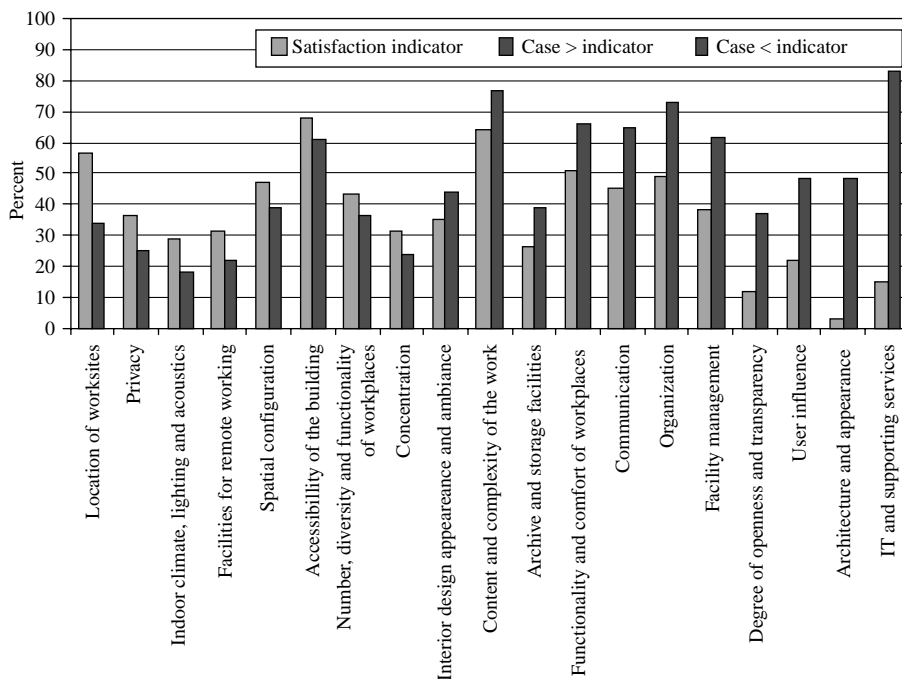Satisfaction with indoor climate, measured with WODI classic



**Figure 4.**
Most important aspects of the work environments, according to the employees

**Source:** WODI KPI (2006)

Workplace Guide (van Meel *et al.*, 2007), with a number of "annotated" workplace pictures that explain the workplace characteristics and user experience of this type of workplace. A tool that is still in progress is the computer model Places and ACTivities. The input of this model consists of a choice of the level of desk sharing, the number of employees, the number of fulltime equivalents, and percentages of time spent to computer work, reading, phoning, filing, meetings and so on. The output is the number of workplaces required, in total and per type of workplace. This decision support tool is not meant to give absolute numbers, but in particular to be able to execute sensitivity analyses in order to understand the consequences of different assumptions and choices. It would be very interesting to apply and test these tools in co-operation with international partners. Finally, the so-called accommodation choice model should be mentioned (Ikiz-Koppejan *et al.*, 2009). This descriptive model shows in four steps how a re-accommodation process could or should be organized. The model pays attention to both the decision-making process as well as to implication of accommodation choices with regard to organizational goals and objectives such as improving employee satisfaction increasing labour productivity and cost reduction. This model is still in progress and will be explored further more in a number of group sessions with end-users and consultants.

In addition, data from WODI classic and WODI light cases are used to explore correlations between satisfaction about different aspects – organization, work processes, facilities – and relationships between satisfaction and perceived labour
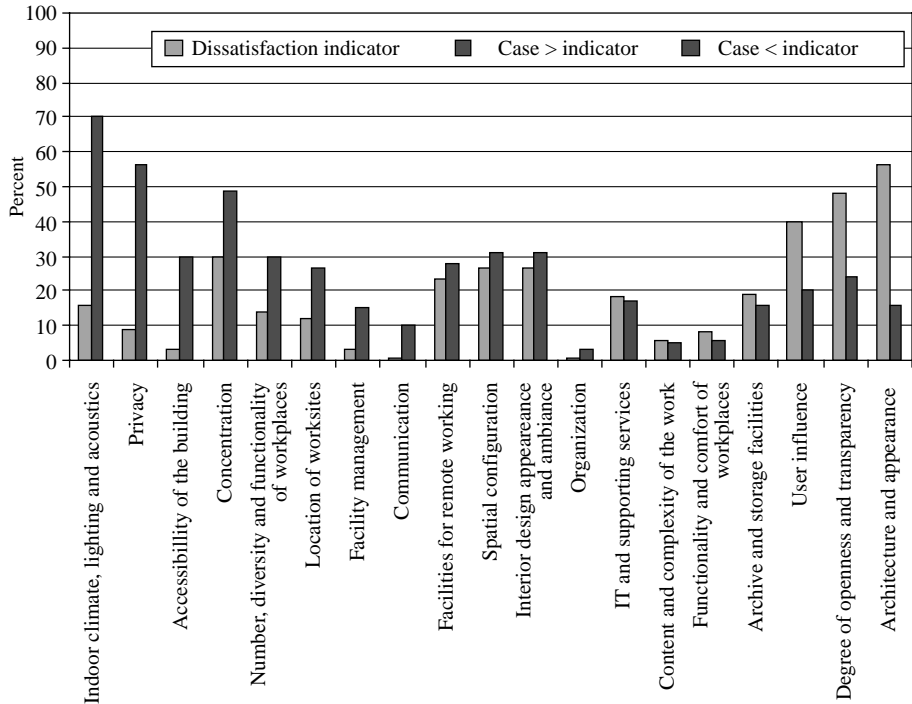
**Figure 6.**
Percentage of dissatisfied
employees in the case
study in comparison with
the average of all cases
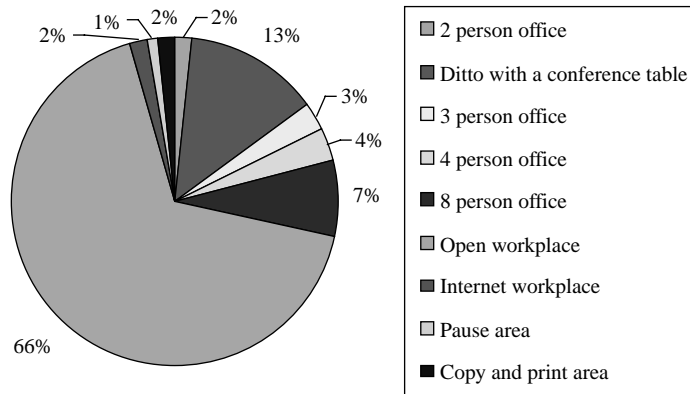
**Source:** WODI KPI (2006)



**Figure 7.**
Use of different
workspaces, according
to SUM

productivity. A first study has been conducted using WODI classic data from 17 cases
(Batenburg and van der Voordt, 2008). Based on multivariate regression analyses, it
was concluded that satisfaction about the working environment has a fairly limited
effect on the perceived productivity, when measured as the percentage of time that
people think they are really productive. Probably the impact of other (non-measured)
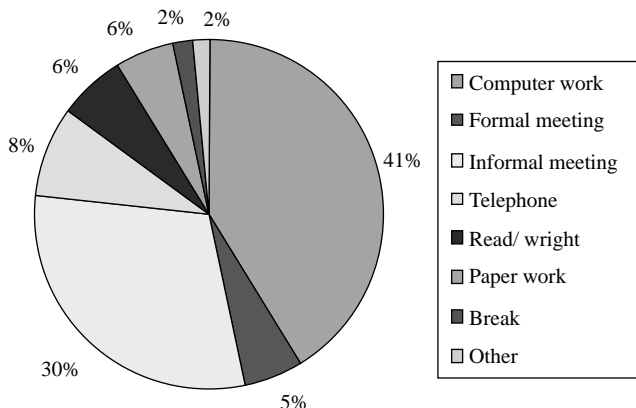
Pie chart legend:
- Computer work
- Formal meeting
- Informal meeting
- Telephone
- Read/ wright
- Paper work
- Break
- Other

Pie chart values: 41%, 5%, 30%, 8%, 6%, 6%, 2%, 2%

**Figure 8.**
Average time spend on
different activities,
according to SUM



Bar chart legend:
- Maximal occupation
- Average occupation

Average occupation values: Average 47%, Open workplace 1 44%, Open workplace 2 28%, Open workplace 3 35%, Open workplace 4 52%, Open workplace 5 28%, Open workplace 6 9%, 8 person office 61%, 4 person office 61%, 3 person office 52%, 2 person office 1 27%, 2 person office 2 78%
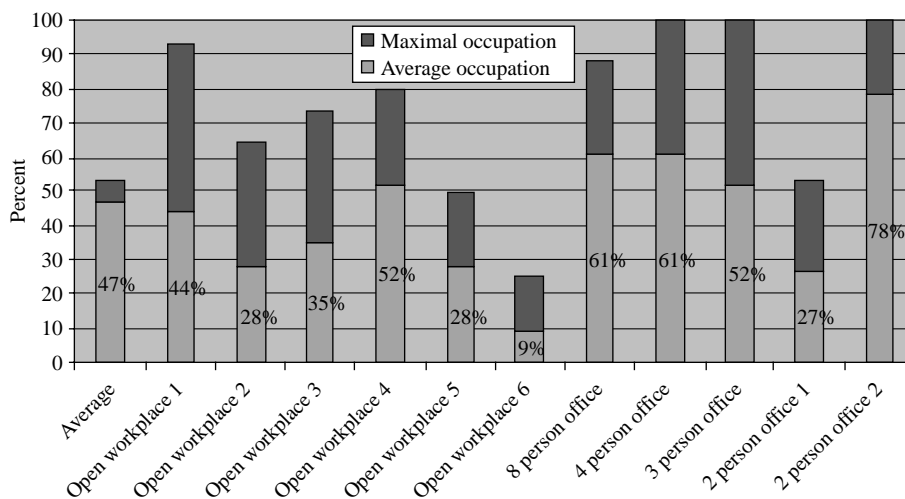
**Figure 9.**
Average and maximum
occupancy rate, according
to SUM

factors such as overall life satisfaction, employees' health, intrinsic motivation and
work atmosphere might be the cause of a low-explained variance (11 per cent).
However, when asking people how satisfied they are about the support of the working
environment to being able to perform a number of activities, in particular satisfaction
with the facilities showed to have a substantial influence on the perceived productivity
(explained variance 54 per cent). Further analyses in depth revealed that the
psychological aspects of the working environment – such as agreeable working
surroundings, adequate privacy and inspiring office design – have a particularly
marked effect on perceived labour productivity. A follow-up study has recently been
started into the differences in employee satisfaction in relationship to personal
characteristics (age, sex, function) and characteristics of the office accommodation.
Hopefully, this will give interesting input to a next paper to discuss fits and misfits

between people, working processes and working environments from a more theoretical perspective in connection to the present debate on usability and organizational performance.

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More information about the WODI toolkit and other projects can be obtained from the web site: www.cfpb.nl or by sending an e-mail to the Center for People and Buildings (info@cfpb.nl) or one of the authors. Organizations that are willing to co-operate are invited to contact the authors.